BY ORDER OF THE COMMANDER
AIR FORCE SPACE COMMAND

AIR FORCE SPACE COMMAND INSTRUCTION 10-1204

15 MAY 2009

Operations

SATELLITE OPERATIONS

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This instruction implements Air Force Policy Directive (AFPD) 10-12, ***Space,*** AFI 10-1201, ***Space Operations*** and is consistent with Strategic Command Directive (SD) 714-2, ***Satellite Communications (SATCOM) System Expert (SSE) Responsibilities***, Strategic Command Instruction *(SI) 505-4,* ***Satellite Disposal Procedures,*** *SI 534-17,* ***Combatant Command Satellite Acceptance Procedures,*** by establishing guidance and procedures for satellite operations and disposal and complements Air Force Space Command Instruction (AFSPCI) 10-604, ***Space Operations Weapon System Management***. It applies to Headquarters Air Force Space Command (HQ AFSPC) and all subordinate units utilizing dedicated or shared satellite control assets, except for Royal Air Force (RAF) Telemetry and Command Station (TCS), Oakhanger. This instruction applies to Air National Guard (ANG) and Air Force Reserve Command (AFRC) units with satellite control responsibilities. Submit changes to HQ AFSPC/A3F, Intelligence, Reconnaissance and Surveillance Operations Division, 150 Vandenberg St., Ste 1105, Peterson AFB CO 80914-4250. If there is a conflict between this instruction and unit, contractor or other major command publications, this instruction applies. Ensure that all records created as a result of prescribed processes are maintained in accordance with AFMAN33-363, ***Management of Records***, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at **https://afrims.amc.af.mil**.

SUMMARY OF CHANGES

AFSPCI 10-1204 is being updated and reissued to provide Major Command (MAJCOM) direction on satellite operations, transition of functions and transfer of roles and responsibilities supporting both Combatant Command (COCOM) guidance and service/force provider responsibilities to subordinate units. All references to United States Space Command (USSPACECOM) have been deleted and replaced with United States Strategic Command (USSTRATCOM). USSTRATCOM references are subject to change pending final operational structure decision by Commander, USSTRATCOM (CDRUSSTRATCOM). Additional organizational responsibilities detailing the comprehensive actions and functions involved with fielding overall space program capabilities are defined in AFSPCI 10-604.

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1. Introduction. AFSPC is responsible for all aspects of providing satellite capabilities to support various Department of Defense (DoD), National and civil agencies and is responsible for organizing, training and equipping the space operations infrastructure. Organizational responsibilities defined within this instruction are specifically tailored for AFSPC-conducted satellite operations. Responsibilities include the development, test, integration, launch, checkout, acceptance, control, transition to COCOM, on-orbit support, and disposal. The AFSPC/CC provides operations policy and guidance to the Numbered Air Forces (NAFs), Component NAF (C-NAF), Centers, and Space Wings (SWs) through the HQ AFSPC/A3. AFSPC will have one Command Lead for each major core capability area (usually an O-6). The Command Lead is the knowledgeable agent and leads a matrix team drawn from across the A-staff. The following are specific responsibilities for conducting satellite operations. Overall program fielding responsibilities are defined in AFSPCI 10-604.

1.1. **Directorate of Air, Space and Nuclear Operations (HQ AFSPC/A3):**

1.1.1. Develops and provides operations policy, concepts and guidance for satellite Telemetry, Tracking and Commanding (TT&C); operation of the Air Force Satellite Control Network (AFSCN) and dedicated AFSPC satellite operations resources; configuration control and reporting.

1.1.2. Establishes training and standardization evaluation policy and guidance IAW AFSPCI 10-1202, ***Crew Operations***, and AFSPCI 36-2202, ***Mission Ready Training, Evaluation and Standardization Programs***.

1.1.3. Ensures standardization across the command for AFSPC conducted satellite operations.

1.1.4. Develops policy and guidance for MAJCOM testing of space systems and primary oversight [Space Innovation and Development Center (SIDC) provides secondary oversight] of

MAJCOM Operational Testing (OT) of space systems IAW AFSPCI 99-103, ***Capabilities-Based Test and Evaluation of Space and Intercontinental Ballistic Missile Systems***.

1.1.5. Develops program specific Memorandums of Agreement (MOA) with non-AFSPC system operational management agencies responsible for individual satellite programs.

1.1.6. Declares Operational Acceptance (OA), per delegation from AFSPC/CC, IAW AFSPCI 10-604.

1.1.7. Prepares and sends notification to gaining COCOM of a new operational satellite available for COCOM acceptance. **(Note: if this is the first satellite of a new constellation, the notification will be from HQ AFSPC/CC vice HQ AFSPC/A3,** see **Attachment 2 & 4**)

1.1.8. Prepares and sends notification to appropriate organizations when ownership is relinquished from AFSPC to another organization.

1.1.9. Manages newly delivered systems from Initial Operational Capability (IOC) to Full Operational Capability (FOC) and through end of system life. HQ AFSPC/A3, per input from the Command Lead and based on defined criteria and status, recommends FOC to AFSPC/CC/CV. Individual satellite systems do not require IOC Declarations as they are part of a new program or system and as reflected in the IOC plan (e.g., Program "X" IOC consists of ground segment, manning, training, two satellites on-orbit, etc.).

1.1.10. Conducts or supports Operations Review Boards (ORBs) as required and related to Lead MAJCOM responsibilities.

1.2. **Directorate of Requirements (HQ AFSPC/A5):**

1.2.1. Develops capability-based, operationally responsive requirements from user-defined needs for space systems.

1.2.2. Supports Air Force Operational Test and Evaluation Center (AFOTEC) and MAJCOM-conducted Operational Test and Evaluation (OT&E) as required for newly launched satellite/system checkout. Requests compliance assessment from HQ AFSPC/JA regarding international treaties, environmental laws and other relevant statutes and regulations on proposed systems to identify liability and other legal issues so they can be addressed in a timely fashion. The assessment should be updated whenever potentially significant changes are made to the system.

1.2.3. Ensures future satellite designs include a disposal capability pursuant to the operational regime and disposal requirements outlined in Section 3.6. Proposed systems and modifications must comply with environmental impact analysis process requirements, including evaluation of proposed disposal alternatives.

1.2.4. Develops IOC criteria in coordination with USSTRATCOM and AFSPC/A3 for newly delivered USAF space mission systems. Individual satellite systems do not require IOC declarations as they are part of a new program or system and as reflected in the IOC plan (e.g., Program "X" IOC consists of ground segment, manning, training, two satellites on-orbit, etc.). IOC criteria will include, but is not limited to:

1.2.4.1. Testing. Successful completion of all applicable satellite bus, payload, ground segment, and user equipment testing.

1.2.4.2. Training. An appropriate number of crews are properly trained and evaluated IAW AFSPCI 10-1202 and AFSPCI 36-2202; appropriate training devices are SIMCERTED IAW AFSPCI 36-2205.

1.2.4.3. Procedures. Technical orders/procedures have been verified and are ready for operational use.

1.2.4.4. Logistics. Logistical support required to sustain the newly delivered space system is in place.

1.2.5. Coordinates with SMC, AFSPC/A1, A2, A3, A4/7, A6, A8/9 to ensure availability of adequate resources for operational Space Wings (SW) prior to IOC (including test systems, ground simulators, training, hardware, and personnel).

1.2.6. Manages newly delivered USAF space systems until IOC, after which responsibility is transferred to HQ AFSPC/A3.

1.3. **Directorate of Safety (HQ AFSPC/SE):**

1.3.1. Develops, processes or manages all appropriate command mishap prevention instructions including system safety and developmental/operational test safety.

1.3.2. Incorporates all MAJCOM space safety requirements into specific requirements documents (e.g. Joint Capabilities Integration and Development System or AF IMT 1067, Modification Proposal) as appropriate.

1.3.3. Responsible for safety assessments of taskings to 14 AF (AFSTRAT), Space and Missile Systems Center (SMC), SIDC and SWs for each space system supported or operated by AFSPC.

1.3.4. Develops and maintains safety procedures and criteria for supporting Operations Review Boards (ORBs).

1.3.5. Provides safety assessments for disposal recommendations to AFSPC/CC for satellites that no longer serve an operational role.

1.3.6. Develops safety assessments for operational concepts for Collision Avoidance (COLA), space system interference (e.g., RFI/EMI) reporting and resolution and defensive space control efforts.

1.3.7. Supports development and maintenance of collision avoidance procedures. Coordinates with subordinate units on close approaches and conjunction assessment.

1.4. **Space and Missile Systems Center (SMC/CC):**

1.4.1. Develops/acquires and tests new space systems capabilities before turnover to AFSPC operational units.

1.4.1.1. Establishes Memorandum of Understanding (MOU) with Non-SMC Organizations when SMC owns and has Satellite Control Authority (SCA)/Payload Control Authority (PCA) over a satellite but uses other crews/facilities for satellite TT&C and C2.

1.4.1.2. Maintains SCA from launch through Launch and Early Orbit (LEO) activities or until the agreed upon SCA transfer to an operational unit. [Space Development and Test Wing (SDTW) only – Maintains or delegates SCA for Research, Development, Test & Evaluation (RDT&E) activities per mission-specific agreements.] SCA transfer may take place via an SCA Acceptance Meeting or a telecon with applicable members [i.e., Material Wing, Numbered Air Force, SW, Squadron]. A documented follow-up of the SCA/PCA

transfer notification is sent to the receiving SCA/PCA organization with a courtesy copy to HQ AFSPC/A3. (See **Attachment 3**)

1.4.1.3. Upon satellite checkout completion, provides documented recommendation of satellite vehicle release to the operational constellation to HQ AFSPC/A3 to include any existing limiting factors. **(Note: if this is the first satellite of a new constellation, the operational release of satellite recommendation will be to HQ AFSPC/CC vice HQ AFSPC/A3, see Attachments 2 & 4)**

1.4.1.4. Notifies AFSPC/CC upon readiness of OA of any new associated ground systems in accordance with AFSPCI 10-604.

1.4.2. Provides sustainment and depot level maintenance of space systems operations hardware and software in accordance with (IAW) AFI 63-107, ***Integrated Product Support Planning and Assessment.***

1.4.3. Provides technical advisors, as required, to support satellite anomaly resolution and launch and early orbit operations.

1.4.3.1. Develops satellite and ground segment test plans in coordination with satellite engineers, operators, and technical advisors.

1.4.4. Conducts RDT&E satellite operations.

1.4.5. Provides transportable assets to support space systems operations.

1.4.6. Provides assets to support factory compatibility testing and launch base compatibility testing on non-Eastern/Western Range launch facilities.

1.4.7. Provides test and calibration support for on-orbit assets.

1.4.8. Supports transition of RDT&E space assets to operational units if required and provides end of life test support.

1.4.9. Provides expertise and resources for development and testing of new satellite control/TT&C ground systems.

1.4.10. Coordinates with HQ AFSPC and SW to ensure SW units required to support new space system tests and development have the necessary resources to support test and development efforts.

1.5. **Fourteenth Air Force [14 AF Air Forces Strategic (AFSTRAT)/CC]:**

1.5.1. Translates global and theater space support requirements into mission support priorities for allocation of satellite operations resources. Provides operational guidance to SWs pertaining to prioritization of satellite operations in support of global and theater operations, routine and emergency satellite relocation, operational status changes and disposal actions in coordination with Joint Functional Component Command for Space (JFCC) Space. Responsible for identifying satellite health and status data as well as information services from SWs necessary to perform Blue Force Tracking.

1.5.2. Responsible for ensuring operational readiness of forces and combat capability of systems.

1.5.3. Responsible for operational taskings to the SWs for each COCOM-apportioned space system supported or operated by AFSPC. (In coordination with JFCC Space)

1.5.4. Develops procedures and criteria for convening Operations Review Boards (ORB).

1.5.5. Provides written notice of Satellite Control Authority (SCA)/Payload Control Authority (PCA) transfers for COCOM-apportioned systems to the HQ AFSPC/A3, 150 Vandenberg St., Ste 1105, Peterson AFB CO 80914-4170, when SCA is transferred from or to an organization outside 14 AF (AFSTRAT).

1.5.6. Makes disposal recommendations to AFSPC/CC for COCOM-apportioned satellites that are no longer mission capable or must be removed from their high-value, operational orbit to prevent adverse impact to the operational mission.

1.5.7. Develops operational concepts for COLA, RFI reporting and resolution, and defensive space control efforts.

1.5.8. Ensures tactics, techniques, and procedures, mishap prevention and space system safety, and policies are standardized among operational wings.

1.5.9. Conducts launch readiness reviews to ensure readiness of launch vehicles, ground systems, and personnel to operate the mission.

1.5.10. Communicates to HQ AFSPC/A5 capability gaps requiring an organize, train, and equip activity.

1.6. **Operational Space Wings (SW/CC):**

1.6.1. Plan for and provide, per individual mission/program Program Requirements Documents (PRDs), continuous satellite operations at all required levels of conflict.

1.6.2. Ensure compliance with operational space mission reporting requirements.

1.6.3. Support HQ AFSPC, through 14 AF (AFSTRAT), planning and resourcing of units performing legacy missions, space system upgrades, and operating new TT&C and satellite systems.

1.6.4. Develop procedures to interface with satellite mission users/operators and other external agencies.

1.6.5. Ensure operational satellite procedures and policies are standardized among operations units.

1.6.6. Delegate SCA/PCA, when SCA/PCA assigned by JFCC Space, to appropriate units for day-to-day operations.

1.6.6.1. Ensure units relinquishing SCA/PCA provide the expected transfer duration, current spacecraft operational configuration, schedule of planned supports and other spacecraft maintenance activities, operational documentation as required and 24-hour points of contact for engineering and technical assistance to the accepting squadron or organization.

1.6.6.2. Ensure gaining and losing units record date and time of SCA/PCA transfers and names of authorizing officials in permanent operations logs. Forward SCA/PCA notification to 14 AF (AFSTRAT).

1.6.6.3. Develop MOUs to describe conditions and responsibilities for SCA/PCA transfer between units of different operational space wings.

1.6.6.4. Develop MOUs describing roles, responsibilities, and relationships if an operational space wing crew is commanding a satellite/payload on behalf of another owning organization with SCA/PCA (e.g. SMC during Launch and Early Orbit Checkout).

1.6.7. Develop supporting plans and procedures for COLA and RFI conflicts including coordination, resolution, and reporting.

1.6.8. Develop, as required, tactical level operating concepts for systems operated and maintained by the SW.

1.6.9. Support the Materiel Wing team as needed during rehearsals and LEO activities to include providing a readiness determination of ground systems and operations to 14 AF (AFSTRAT) prior to Launch Readiness Reviews.

1.6.10. Supplement this instruction with local instructions as necessary.

1.7. **Space Innovation and Development Center (SIDC):**

1.7.1. Performs MAJCOM-conducted OT&E as required to support operational acceptance decisions and IOC-related testing requirements.

1.7.2. Collaborates with HQ AFSPC, SMC, and SW to provide appropriate post-IOC/sustainment OT&E support.

2. Command, Control and Management. CDRUSSTRATCOM exercises COCOM on behalf of the Secretary of Defense (SecDef). SI 534-17 outlines the procedures and responsibilities for CDRUSSTRATCOM to accept COCOM command authority for designated operational satellites and satellite payloads as they enter service. Component commands exercise Operational Control (OPCON) and Tactical Control (TACON) under CDRUSSTRATCOM COCOM authority. CDRUSSTRATCOM exercises COCOM of assigned forces under Title 10, United States Code, and as directed by the Secretary of Defense Memorandum, *Forces For Unified Commands*. Per SI 534-17, Standard COCOM Acceptance procedure is as follows: After launch and early-orbit testing and any required final orbit maneuvers (as specified in each system's test plan), the responsible component command or agency assesses the satellite's capability to support operational requirements, declares the satellite operational, and recommends that CDRUSSTRATCOM accept COCOM. CDRUSSTRATCOM initiates acceptance of mission activation, accepts COCOM and Command Authority (CA) for the system, and delegates OPCON and CA for the system to the appropriate component. Additionally, Satellite Control Authority (SCA) is the authority to command and control the spacecraft and transfers at key points during the life cycle of the vehicle. The Material Wing has initial SCA, which it transfers to the operational community at a pre-determined time in the system life cycle. SCA is transferred from the Material Wing to the C-NAF, which in turn transfers SCA to the appropriate SW. For day-to-day operations, SCA is further delegated down to the squadron level. The initial SCA transfer can occur as early as vehicle separation from booster or as late as the vehicle being placed into operational orbit.

2.1. **Early COCOM Acceptance**. Based upon operational need and in time of war, CDRUSSTRATCOM may request early COCOM acceptance of a satellite prior to operational acceptance. To request early COCOM, CDRUSSTRATCOM will send an official request to AFSPC/CC, the service provider. After collecting and analyzing relevant SV test and performance data, AFSPC/CC will provide CDRUSSTRATCOM with a COCOM recommendation that includes an assessment of risk to users should COCOM be accepted earlier than originally planned. Early COCOM recommendations will be based upon the criteria outlined in section 1.4.6 of this instruction.

2.1.1. For an early COCOM recommendation involving the first SV launch of a new constellation, that recommendation will come from the AFSPC/CC to CDRUSSTRATCOM. For all subsequent launches, early COCOM recommendations may come from HQ AFSPC/A3 to USSTRATCOM/J3.

2.2. **COCOM Acceptance.** To request COCOM, CDRUSSTRATCOM will send an official request to AFSPC/CC, the service provider. After collecting and analyzing relevant SV test and performance data from the SSE and others, AFSPC/CC will provide CDRUSSTRATCOM with a COCOM recommendation that includes an overall assessment of risk. COCOM recommendations will be based upon the criteria outlined in SI 534-17, Combatant Command Satellite Acceptance Procedures. (See **Attachment 3**)

2.2.1. AFSPC/CC will submit COCOM recommendations to CDRUSSTRATCOM for satellites that are the first launch of a new constellation. For all subsequent launches, COCOM acceptance recommendations may come from HQ AFSPC/A3 to USSTRATCOM/J3.

2.2.2. Upon successful satellite checkout, AFSPC/CC or A3 (as appropriate) will notify USSTRATCOM of the new asset and state readiness and limiting factors for COCOM acceptance. (See **Attachment 2 and 4**)

3. Operations. AFSPC's satellite operations mission is to provide pre-launch; launch, deployment and early orbit checkout; anomaly resolution; operational TT&C; mission operations; end-of-life operations and disposal support to all assigned space systems. The SWs will develop procedures to operate space systems, including satellite vehicle (SV) and associated satellite operations assets, according to Higher Headquarters (HHQ) direction.

3.1. Pre-Launch Preparation and Activities.

3.1.1. The applicable SMC Wing/Group will:

3.1.1.1. Develop satellite/payload test and checkout plans for each new satellite/payload to be operationally employed. Test and checkout plans will be coordinated with the developing organization as well as the receiving operational wing/unit.

3.1.1.2. Develop, test and checkout appropriate database updates for new satellites and ensure incorporation/compatibility with the ground segment prior to Ground Readiness Reviews, to include factory compatibility testing and launch based compatibility testing.

3.1.1.3. Assist the operational SWs in the conduct of Ground Readiness Reviews and dress rehearsals prior to launch.

3.1.2. Fourteenth Air Force (14 AF (AFSTRAT)/CC) will:

3.1.2.1. Conduct Operational Readiness Reviews to ensure/verify all support missions requirements are met for all Eastern and Western Range launches.

3.1.3. The applicable operational SW will:

3.1.3.1. Perform pre-launch SV TT&C compatibility checkout. Provide additional support for all planning efforts leading to launch, including Ground Readiness Reviews and Launch Rehearsals.

3.1.3.2. Provide mission readiness assessment to Spacelift Launch Commander (SLCC) for all SW activities and resources supporting launch operations.

3.2. **Launch and Early Orbit (LEO) Operations.** The SWs will develop procedures for the following:

3.2.1. Support launch operations as required, including tracking and monitoring the SV while attached to the launch vehicle through booster and launch operations checkout. Receive/assume SCA from the launch SW or SMC post launch or upon completion of early orbit checkout, as appropriate. (See **Attachment 2 & 3**)

3.2.1.1. Receive/Assume SCA from the launch wing or SMC at different points during launch or test and checkout depending on satellite program requirements and IAW the Satellite Transition Plan and/or applicable MOU.

3.2.1.2. Contractor launched SV. In cases where the SV is contractor launched but is intended to be controlled and operated by AFSPC, a support agreement will be established between the contractor(s), SMC, and the appropriate AFSPC unit(s). This agreement will clearly define the timeline and conditions for SCA transfer(s), the roles and responsibilities of contractor and government personnel, and the conditions for final SCA transfer to the military including DD Form 250, Inspection and Receiving Report signature.

3.2.2. Early Use. Agencies who require SV data, telemetry, or payload services outside of the normal testing process before the SV is operational must officially request those services from SMC with notification to HQ AFSPC/A3.

3.2.3. Conduct orbital analysis operations to perform essential functions such as ephemeris generation and distribution, maneuver planning, disposal operations and collision avoidance.

3.3. **On-Orbit Operations.** The SWs will develop procedures for the following:

3.3.1. Conduct on-orbit TT&C operations to evaluate SV status, maintain operational capability, and conduct bus and payload operations as required. These activities include, but are not limited to, prescribed satellite TT&C activities, mission data recovery, repositioning maneuvers and station keeping functions throughout the useful life of the SV.

3.3.2. In an emergency situation that requires immediate decision and action, implement actions necessary to safe/recover SV. In such cases, the SW may take actions as determined by unit Satellite Anomaly Working Group (SAWG) to the extent required in the interests of SV safety. In all cases, SWs will keep the JSpOC informed of actions taken to safe/recover the SV.

3.3.3. Develop procedures to monitor/maintain the status of each subsystem and maintain and analyze available SV telemetry throughout the useful life of each SV. Analyze data to detect trends, degradation or anomalies and develop procedures and recommend changes to minimize the effects of anomalies.

3.3.4. Develop procedures to monitor, trend, and analyze satellite/payload mission performance (e.g. detection capability , timing, etc.). Analyze data to detect trends or identify mission degradation to support the development of mitigation procedures and constellation redeployment/sustainment efforts.

3.3.5. Report OPSCAPS/SYSCAPS, as required, IAW established procedures for each supported mission area.

3.3.6. (50 SW) Provide AFSCN services and support to Air Force, DoD, National Aeronautics and Space Administration (NASA), Civil and other authorized users. Plan and execute user, to

include operational Satellite Operations Center (SOC), access to network assets (e.g., communications, antenna systems).

3.3.7. Develop tactics, techniques, and procedures consistent with user requirements.

3.3.8. Conduct space system anomaly and trend analysis in accordance with HQ AFSPC/A3 direction and System Program Office (SPO) Orbital Operations Handbooks (OOH).

3.3.9. Develop tactics, techniques, and procedures for detecting and characterizing indications of potential hostile action taken against space systems (i.e. ground, communications and space segment). Collect and correlate data across all assigned space systems. Identify actions that can be taken to mitigate effects of an attack.

3.3.10. Spare Satellite Operations. In response to HHQ or JFCC Space direction and operational needs, SWs will develop procedures for operating and sustaining residual capability satellites. 14 AF (AFSTRAT) and the SW will coordinate residual satellite operational policies and plans through HQ AFSPC/A3 to ensure affected units are appropriately resourced.

3.3.11. Conduct orbital analysis operations to perform essential functions such as ephemeris generation and distribution, maneuver planning, disposal operations and collision avoidance.

3.4. **Contingency Operations.** The SWs will develop procedures to conduct contingency operations for the following:

3.4.1. Operate and correct malfunctioning SVs and ground systems consistent with technical guidance provided by the SPOs, responsible or authorized external agencies and SV and ground system contractors. The procedures will address correcting or mitigating the impact of failures, including "safing" the SV (i.e., ensuring the SV does not further damage itself). These procedures will also include actions aimed at maximizing on orbit SV capabilities while minimizing risk to SV health. All anomalies will be evaluated for indications of intentional hostile action as part of the initial response to resolve the anomalies.

3.4.2. Convene satellite anomaly working groups as required to identify, assess, and resolve anomalous conditions. Transfer SCA as required.

3.4.3. Use of SVs to maximize support to tactical and strategic units in the event of hostilities interrupting routine capability to meet mission requirements.

3.4.4. Establish threat and intrusion detection procedures. Perform routine analysis of space systems telemetry to detect and report suspected or actual space system interference, attacks, natural threats, or system failures in a timely manner. The defensive space control efforts will significantly contribute to situational awareness and resource protection.

3.4.5. Establish collision avoidance procedures. Identify close approaches and coordinate with Joint Space Operations Center (JSpOC) for conjunction assessment. Determine Course of Action (COA) and implement approved COA as directed by 14 AF (AFSTRAT).

3.5. **Backup Satellite Control.** Provide continuity of operations for SV control of COCOM-apportioned assets in accordance with the AFSPC/CC Memo: “Back-up Satellite Control Policy Directive, dated 18 Jan 05.

3.5.1. Backup control capabilities (TT&C for satellite platforms, payloads and scheduling) will be established and function until primary control capabilities are restored following these guidelines:

3.5.1.1. This capability includes the necessary communication links, TT&C, maneuverability, reconfiguration, launch operations [Global Positioning System (GPS) only] and anomaly resolution actions. Backup Satellite Operation Centers (BSOCs) are not intended to mirror the full capability of the primary operation centers. However, backup communication links should have the same capability as the primary communication link.

3.5.1.2. Given the loss of the primary operations facility or communications link, backup resources will assume responsibility for conducting routine operations, anomaly resolution and/or contingency operations. Although the actual responsiveness required will vary with specific mission requirements, procedures and data bases must be ready to implement with sufficient responsiveness to preclude lasting impact to mission capability. Facilities must be able to sustain indefinite operations for reconstitution time of the primary space operation center(s).

3.5.1.3. Geographical separation should be sufficient to prevent simultaneous degradation to both a prime and backup capability that could degrade mission capability from the occurrence of a man-made or natural threat event (e.g. terrorist attack, tornado, earthquake, etc.).

3.5.2. Backup communication control node capabilities of the AFSCN will be established and function until primary control node communications capabilities are restored following these guidelines:

3.5.2.1. Provide for full primary and additional communications services to assure operator connectivity to all elements of the AFSCN.

3.5.2.2. Given the loss of the primary control node facility, backup control node communications must be maintained in a "hot" condition able to immediately assume responsibility for conducting TT&C, anomaly resolution and/or contingency operations.

3.5.2.3. Geographical separation should be sufficient to prevent simultaneous degradation to both the prime and backup Operational Control Nodes that could degrade mission capability from the same man-made or natural threat (e.g. single point of failure, severe weather, terrorist attack or earthquake).

3.5.3. While not required, it is desirable for backup capabilities to be organic AFSPC units in order to take advantage of the synergy gained from mutual support. RDT&E missions are exempt from having a backup satellite control capability; however, AFSPC RDT&E satellite control capabilities may be available to provide backup functions for operational missions.

3.5.4. Wings will develop tactics, techniques and procedures to support satellite control backup operations.

3.5.5. HQ AFSPC/A3 will develop designed operational capability (DOC) statements for each backup control capability IAW AFI 10-201, ***Status of Resources and Training Systems***, and an annex to the Concept of Operations for Satellite Operations Mission, on backup satellite control.

3.6. **Satellite End-of-Life and Disposal.** The objective of satellite disposal is to reduce the potential for spacecraft collisions and frequency interference, to mitigate the creation of additional space debris and to open orbital slots to newer SVs. Therefore, deorbiting or removing a non-mission capable satellite from its operational orbit and placing it into an established disposal region is of paramount importance. As a satellite approaches the end of its operational life, each SW will ensure every satellite maintains its disposal capability. This includes assured TT&C and sufficient

fuel to reach the disposal region. All efforts and actions will be geared towards the objective of de-orbiting or removing a satellite from an operational orbit to an orbit of non-interference. This instruction shall also be used as guidance for disposal of Research and Development (R&D) satellites. Authority to dispose of satellites over which CDRUSSTRATCOM exercises Combatant Command (COCOM) is outlined in Chairman Joint Chiefs of Staff Instruction (CJCSI) 6250.01B, the ***National Space Policy***, published August 31, 2006 and SI 505-4. The SSE (as outlined in SI 714-2 and SI 505-4), or equivalent for non-SATCOM systems, will recommend disposal if any degradation would preclude future removal from high-value operational orbits. If USSTRATCOM no longer holds COCOM of a satellite [e.g., satellites in long-term Test And Check Out (TACO) programs], the SSE or organization with system responsibility may approve disposal IAW SI 505-4. (**See Attachment 5)**.

3.6.1. HQ AFSPC/A3/SE: Will coordinate on all recommended disposal actions prior to the SWs taking any disposal actions.

3.6.2. 14 AF (AFSTRAT):

3.6.2.1. Acts as Satellite/SATCOM System Expert (SSE) for DSP, SBIRS, GPS and Milstar. Acts as satellite bus experts for the DSCS and WGS constellations. Approves criteria for identifying satellites as non-mission capable, and forwards the criteria to USSTRATCOM through HQ AFSPC. Coordinates with Space and Missile Defense Command/Army Strategic Command (SMDC/ARSTRAT), the Consolidated SSE for Communication Systems Defense Satellite Communications System (DSCS) and Wideband Global SATCOM (WGS), to identify DSCS and WGS satellites as non-mission capable. Coordinates with Air Force Technical Application Center (AFTAC)/TTH for United States Nuclear Detonation Detection System (USNDS) payload criteria and for identifying USNDS payloads as non-mission capable.

3.6.2.2. Requests to USSTRATCOM, through HQ AFSPC/A3, to develop and manage any end-of-life tests or other test activities prior to satellite disposal, as required.

3.6.2.3. Declares satellites non-mission capable once a satellite meets approved criteria and forwards a disposal recommendation to AFSPC/CC. At a minimum, the recommendation will include the disposal criteria that are being met, means of disposal, and the projected date for disposal.

3.6.2.4. Develops and provides USSTRATCOM and HQ AFSPC/A3 with plans for satellite disposal to include end-of-life testing requirements, means for disposal, disposal orbit, environmental and safety considerations.

3.6.2.5. In the case of an emergency where disposing of a satellite must be expedited, sends immediate request for disposal to USSTRATCOM; includes Joint Staff/J6 and J3 for Military Satellite Communication (MILSATCOM) programs; sends information copy for all messages to HQ AFSPC/A3.

3.6.3. Operational Space Wings:

3.6.3.1. Develop and forward program-specific disposal criteria for non-mission capable satellites to 14 AF (AFSTRAT) for approval. As a minimum, these criteria will include on-board fuel estimate, fuel consumption, fuel requirements for disposal actions, the ability of the bus to support the payloads, payload capability and capacity (including secondary payloads), vehicle command/control capability, vehicle power capacity, disposal maneuver requirements, and operational safety considerations. For satellites that will reenter earth's

atmosphere, provide an analysis detailing probability, make-up and size of any object surviving reentry. AFSPC SSEs will develop and forward program specific disposal criteria after coordination with other platform and payload users, to USSTRATCOM.

3.6.3.2. Upon direction, place satellites designated for disposal in a position (slot/plane/orbit) of non-interference with existing systems or deorbit into the earth's atmosphere. SWs will consider operational orbit contamination, radio-frequency interference and future constellation development. These guidelines do not preclude any end-of-life testing deemed necessary either prior to or after satellites are placed in their disposal orbit. Ensure AFI 32-7061, The Environmental Impact Analysis Process (EIAP) is completed in a timely fashion.

3.6.3.2.1. Properly safing the bus and all payloads is a critical step in the disposal process. The SWs will deplete all spacecraft fuel to the maximum extent possible, disable all spacecraft battery charging systems, stabilize the spacecraft in a neutral thermal flight mode (slow spin for most) and, when appropriate, disable transmitters. Safing the satellite takes precedence over all other disposal actions.

3.6.3.2.2. Shall remove non-mission capable vehicles from operational orbits IAW SI 505-4.

3.6.3.3. Monitor satellite capability as part of normal operations.

3.6.3.4. Conduct orbital analysis operations to perform essential functions such as ephemeris generation and distribution, maneuver planning, disposal operations and collision avoidance.

3.6.3.5. Submit specific deorbit or post-maneuver vectors to 14 AF (AFSTRAT) before disposal for approval of reentry locations and/or orbital safety screening for possible conjunctions.

3.6.3.6. Contact the Joint Space Operations Center (JSpOC) in an emergency situation to expedite the decision process for the safe disposal of a satellite.

4. R&D System Transition. Emerging technologies enable opportunities to quickly acquire advanced technology sensors, satellites, intelligent subsystems and threat avoidance systems on R&D space and ground systems. All systems capability assessments, transitions, integration and sustainment will follow an accelerated acquisition process utilizing a five-step approach: Data collection, Decision, Planning, Implementation and Operation. Decisions to transition these systems will be made by HQ AFSPC/A3 based on recommendations from HQ AFSPC/A5, validated requirements not met by existing systems, funding availability, and any limitations. All agencies are empowered to identify potential R&D systems to HQ AFSPC/A3. Once operational, new systems will follow established (traditional) acquisition, integration, program management and testing standards (when applicable).

4.1. **HQ AFSPC/A3:**

4.1.1. Assesses requirements and evaluates viability of proposed R&D system to fulfill operational requirements.

4.1.2. In conjunction with 14 AF and the SW, develops a transition plan to integrate required TT&C systems into the assigned space wing and develop crew training, evaluation, and operational procedures in preparation for normal operations.

4.1.3. Coordinates with JFCC Space for those spacecraft that will be OPCON'd to USSTRATCOM and SMC to transition new R&D systems, components or capabilities to operations.

4.1.4. Manages funding and identifies funding requirements through system life and Program Objective Memorandum (POM) cycles to AFSPC A8/9 prior to system acceptance. Ensures new taskings are within the scope of the intended unit's Designed Operational Capability (DOC) statement. If required, amends DOC statement. Ensures new systems are sustainable through logistics and maintenance infrastructure.

4.1.5. Develops transition plans to include test and evaluation, mishap prevention, and/or system safety requirements.

4.1.6. Prepares custody documentation to record transfer and/or acceptance of hardware and software.

4.1.7. Ensures availability of appropriate command, control, and system integration documents to support transition of new systems, components, and capabilities.

4.1.8. Identifies system requirements, e.g., hours of support required per day, specialized payload requirements, scheduling requirements, ground system equipment configurations, disposal criteria, etc.

4.1.9. Coordinates transition plan of new system with losing agency (SMC, Missile Defense Agency [MDA], etc.) prior to delivery to 14 AF (AFSTRAT).

4.1.10. Certifies new system data processing and products for integration into established, mission certified processing systems, as required.

4.1.11. Requests HQ AFSPC/A1F assistance to validate manpower requirements IAW AFSPCI 10-604.

4.1.12. Recommends to 14 AF/JFCC Space use of existing operations units and resources to perform operational testing of R&D assets.

4.1.13. Coordinates with AETC on training requirements.

4.1.14. Participate in satellite operation planning activities such as the AFSPC Strategic Planning Process (i.e. Integrated Planning Process (IPP)).

4.2. **HQ AFSPC/A5:**

4.2.1. Develops and processes appropriate capability requirements documents for Joint Concept Technology Demonstrations (JCTDs) and Advanced Technology Demonstrations (ATDs).

4.2.2. Consolidates MAJCOM space system capability requirements into specific ACTD or ATD proposals, as appropriate.

4.2.3. Supports Air Force Research Laboratory conducting demonstrations.

4.2.4. Provides advocacy for space system ACTD and/or ATD requirements and funding.

4.2.5. Coordinates with 14 AF (AFSTRAT) to transition ACTD/ATD leave behind systems, components or capabilities to operations.

4.2.6. Ensures availability of appropriate Interface Control Documents (ICD) to support new systems, components and capabilities.

4.2.7. Provides criteria for proposed R&D system's compatibility with existing ground systems.

4.3. HQ AFSPC/SE:

4.3.1. Provides advocacy for space safety requirements and funding.

4.3.2. Assesses risk of introducing R&D data into established, mission-certified processing systems.

4.4. **14 AF (AFSTRAT):**

4.4.1. Provides criteria for operational assessment and viability of proposed R&D system to HQ AFSPC.

4.4.2. Provides assessment of proposed R&D system's ability to meet USSTRATCOM requirements levied on HQ AFSPC.

4.4.3. Supports Operational Testing to assess the impact of accepting the R&D asset.

4.4.4. Ensures new systems, components or capabilities are integrated into wartime missions and taskings.

4.4.5. Declares System/Technology operational and notifies USSTRATCOM through HQ AFSPC.

4.5. **Space Innovation and Development Center (SIDC):**

4.5.1. Provides technical assessment of proposed R&D system viability and Operational Testing as required to support operational acceptance decisions.

4.5.2. Supports integration into the gaining unit.

4.5.3. Determines compatibility and assesses risk of introducing R&D data into established, mission-certified processing systems.

4.6. **Operational Space Wings:**

4.6.1. Develop crew operations procedures and appropriate Operations Instructions (OIs). Ensure units develop and manage operations, training, standardization, evaluation and crew force management programs as required to support the new space systems, components or operational capability, IAW AFSPCI 10-1202, ***Crew Operations*** and AFSPCI 36-2202, ***Mission ReadyTraining, Evaluation and Standardization Programs.***

4.6.2. Identify funding and resource requirements for operating new systems.

4.7. **Space and Missile Systems Center:**

4.7.1. Operates R&D assets until either mission termination or transfer to an operational unit.

4.7.2. Provides technical support during the transfer of R&D assets to operational units.

4.7.3. Provides logistics support to R&D assets during their test period and, additionally, until turnover if required for follow-on operational use.

4.7.4. Develops or acquires appropriate Interface Control Documents (ICD) to support new systems, components and capabilities.

5. Capability Assessment and Reporting. System Capability (SYSCAP) is a continuous assessment of the capability of a system or program to perform its mission. Operational Capability (OPSCAP) is a continuous assessment of the capability of the major components of a system or program to perform the

mission. SYSCAP and OPSCAP assessments support real-time planning and serve as a measure of system capability. Each SW will develop specific criteria to define mission degradation and SYSCAP/OPSCAP status changes. 14 AF (AFSTRAT)/A3 is the final approval authority for these criteria, IAW COCOM mission policies and procedures. Submit reports IAW AFI 10-206 and AFI10-206_AFSPCSUP1, ***Operational Reporting***.

6. Constellation Sustainment. Constellation Sustainment Assessment Teams (CSAT) will review on-orbit constellation status for the Defense Meteorological Satellite Program (DMSP), Defense Support Program (DSP), GPS, DSCS, Space Based Infrared System (SBIRS), WGS, Milstar and Advanced Extremely High Frequency System (AEHF) when AEHF becomes operational. CSATs will convene at least semi-annually, prior to the Current Launch Schedule (CLS) Review Board (CLSRB), and review the Space Launch Manifest and CLS, examine the health of operational constellations (including possible disposal actions), ensure user requirements are satisfied and forecast launch requirements. CSATs will forward satellite reconfiguration, disposal, constellation repositioning, and launch replenishment recommendations to 14 AF (AFSTRAT) for approval. 14 AF (AFSTRAT)/CC approves, or forwards for approval, reconfiguration, repositioning, and disposal recommendations to USSTRATCOM with a cc to HQ AFSPC and issues launch schedule recommendations based upon the results of a COCOM resource assessment to the CLSRB. The 14 AF (AFSTRAT)/CC approves or disapproves the launch schedule recommendations and the decision is reflected in the revised CLS. Teams will also convene on an as-needed basis in response to contingencies.

6.1. **Membership.** CSATs are chaired or co-chaired by 14 AF (AFSTRAT) and will be comprised of members from HQ AFSPC, 14 AF (AFSTRAT), SMC, SWs, the SOPS and/or SWS providing TT&C and mission support, the supporting Space Launch Squadron (SLS), mission users and other interested agencies as required. DSCS/WGS CSATs are co-chaired by SMDC/ARSTRAT and 14 AF (AFSTRAT). DMSP CSATs are co-chaired by NOAA and 14AF (AFSTRAT).

6.2. **Responsibilities.** Responsibilities outlined in this instruction cover overall CSAT management Adand chairmanship. Specific responsibilities (e.g., secretariat, tracking of Action Items, etc.) will be defined in roles and responsibilities documents developed for each CSAT.

6.2.1. HQ AFSPC/A3 participates as a member in CSATs for DMSP, DSP, SBIRS, GPS, DSCS, WGS, Milstar and AEHF when AEHF becomes operational. HQ AFSPC/A3 presents constellation replenishment recommendations for COCOM constellations using the Operational Generalized Availability Program (OPGAP) model.

6.2.2. 14 AF (AFSTRAT)/A3 organizes and chairs CSATs for DSP, SBIRS, GPS, Milstar and AEHF when AEHF becomes operational. 14 AF (AFSTRAT)/A3 organizes and co-chairs DSCS/WGS and DMSP CSATs.

7. Reports. Accomplish reports IAW AFI 10-206 and AFI 10-206, AFSPC SUP1, ***Operational Reporting.***

8. Adopted Forms.

AF IMT 1067, *Modification Proposal*

DD Form 250, *Inspection and Receiving Report*

STANLEY T. KRESGE, Brigadier General, USAF
Director of Air, Space and Nuclear Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 10-1201, *Space Operations*
AFI 10-1211, *Space Launch Operations*
AFI 10-201, *Status of Resources and Training Systems*
AFI 10-206, *Operational Reporting*
AFI 10-206_AFSPCSUP1, *Operational Reporting*
AFI 10-601, *Capabilities-Based Requirements Development*
AFPD 10-12, *Space*
AFPD 10-7, *Information Operations*
AFSPCI 10-1202, *Crew Operations*
AFSPCI 10-1213, *Spacelift Launch Strategies and Scheduling Procedures*
AFSPCI 10-604, *Space Operations Weapon System Management*
AFSPCI 36-2202, *Mission Ready Training, Evaluation and Standardization Programs*
AFSPCI 36-283, *Space Training System Management*
AFSPCI 99-103, *Capabilities-Based Test and Evaluation of Space and Intercontinental Ballistic Missile Systems*
CJCSI 6250.01B, *Satellite Communications*
DoD Directive 3100.10, *Space Policy*
DoD Instruction 3100.12, *Space Support*
SD 714-2, *Satellite Communication (SATCOM) System Expert (SSE) Responsibilities*
SI 505-4, *Satellite Disposal Procedures*
SI 505-4, *Satellite Disposal Procedures*
SI 534-17, *Combatant Command Satellite Acceptance Procedures*

Abbreviations and Acronyms

14 AF (AFSTRAT)—14th Air Force (Air Forces Strategic)

A3—Director of Air, Space and Nuclear Operations

A3F—ISR Operations Division, Directorate of Air, Space and Information Operations

A3M—MILSATCOM Operations Division, Directorate of Air, Space and Information Operations

A3P—PNT Operations Division, Directorate of Air, Space and Information Operations

AEHF—Advanced Extremely High Frequency System

AFOTEC—Air Force Operational Test and Evaluation Center

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFSCN—Air Force Satellite Control Network

AFSPC—Air Force Space Command, Air Force Component to US Strategic Command

AFSTRAT—Air Forces Strategic

AFTAC—Air Force Technical Applications Center

ARSTRAT—Army Strategic Command

ATC—Advanced Technology Demonstration

BSOC—Backup Satellite Operations Center

C^2—Command and Control

C^3I—Command, Control, Communications and Intelligence

CA—Command Authority

CDD—Capability Development Document

CDRUSSTRATCOM—Commander, United States Strategic Command

CI—Configuration Item

CJCSI—Chairman Joint Chiefs of Staff Instruction

CLS—Current Launch Schedule

CLSRB—Current Launch Schedule Review Board

COA—Course of Action

COCOM—Combatant Command

COLA—Collision Avoidance

CPD—Capability Production Document

CSAT—Constellation Sustainment Assessment Team

DISA—Defense Information Systems Agency

DMSP—Defense Meteorological Satellite Program

DOC—Designed Operational Capability

DSCS—Defense Satellite Communications System

DSP—Defense Support Program

DSP MGS—Defense Support Program Mobile Ground System

EHF—Extremely High Frequency

EMI—Electromagnetic Interference

FLTSAT—Fleet Satellite

FLTSATCOM—Fleet Satellite Communications

FOC—Full Operational Capability

GPS—Global Positioning System

HHQ—Higher Headquarters

I&M—Improvements and Modernization

ICD—Interface Control Documents

IOC—Initial Operational Capability

IPO—Integrated Program Office

IWSM—Integrated Weapon System Management

JCTD—Advanced Concept Technology Demonstration

JFCC—Joint Functional Component Command

JSpOC—Joint Space Operations Center

LDA—Launch and Deployment Authority

LEO—Launch and Early Orbit

LRRB—Logistics Readiness Review Board

MDA—Missile Defense Agency

MILSATCOM—Military Satellite Communications

MNS—Mission Need Statement

MOA—Memorandum of Agreement

MOU—Memorandum of Understanding

MUOS—Mobile User Objective System

NAF—Numbered Air Force

NASA—National Aeronautics and Space Administration

NNSOC—Naval Network and Space Operations Command

NPOESS—National Polar-orbiting Operational Environmental Satellite System

NSC—National Security Council

NTSC—National Science & Technology Council

OI—Operating Instruction

OPCON—Operational Control

OPGAP—Operational Generalized Availability Program

OPLAN—Operations Plan

OPSCAP—Operations Capability

ORB—Operations Review Board

ORD—Operational Requirements Document

OT&E—Operational Test and Evaluation

PCA—Payload Control Authority

PMC—Partial Mission Capable

R&D—Research and Development

RAF—Royal Air Force

RDT&E—Research, Development, Test and Evaluation

RFI—Radio Frequency Interference

SATCOM—Satellite Communications

SBIRS—Space Based Infrared System

SBSS—Space Based Space Surveillance

SCA—Satellite Control Authority

SD—Strategic Command Directive

SDTW—Space Development and Test Wing

SI—Strategic Command Instruction

SIDC—Space Innovation and Development Center

SLCC—Spacelift Launch Commander

SLS—Space Launch Squadron

SMC—Space and Missile Systems Center

SMDC—Space and Missile Defense Command

SOC—Satellite Operations Center

SOH—State of Health

SOPS—Space Operations Squadron

SORTS—Status of Resources and Training System

SPCS—Space Control Squadron

SPO—System Program Office

SSE—Satellite System Expert

SV—Satellite Vehicle

SW—Space Wing

SWS—Space Warning Squadron

SYSCAP—Systems Capability

TACO—Test and Check-Out

TACON—Tactical Control

TCS—Telemetry and Command Station

TT&C— Telemetry, Tracking and Commanding

UFO—Ultra High Frequency Follow-on

UHF—Ultra High Frequency

USNDS—United States Nuclear Detonation Detection System

USSPACECOM—United States Space Command

USSTRATCOM—United States Strategic Command

WGS—Wideband Global SATCOM

Terms

Air Force Satellite Control Network (AFSCN)—An operational national resource of communication links and worldwide TT&C antennas that provide global support for launch and on-orbit operations for DoD, national, RDT&E, NOAA, NASA and Allied space systems and programs. The AFSCN provides network support for satellite operations in support of warfighters, the President, Secretary of Defense, and NASA space missions.

Anomaly—An unexpected or unplanned condition or event affecting the space, ground or communications segment that does not meet system performance parameters.

Bus—The part of the satellite that carries and supports the payload. The bus includes the satellite's structure, power system, telemetry, tracking and commanding system, attitude control system, and thermal control. The satellite bus can degrade/fail before the payload, making disposal necessary even though the payload can still accomplish the mission.

Combatant Command (COCOM)—Non-transferable command authority established by Title 10, United States Code, Section 164, exercised only by commanders of unified combatant commands. COCOM is the authority of a Combatant Commander to perform those functions of command over assigned forces involving organizing and employing command and forces, assigning tasks, designating objectives and giving authoritative direction over all aspects of military operations, joint training and logistics necessary to accomplish the mission assigned to the command. COCOM provides full authority to organize and employ commands and forces as the Combatant Commander considers necessary to accomplish assigned missions.

Command Authority (CA)—Combatant command (command authority) cannot be delegated and is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. Combatant command (command authority) should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Combatant command (command authority) provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions. Operational control is inherent in combatant command (command authority).

Configuration Control—The systematic proposal, justification, evaluation, coordination, approval or disapproval and implementation of all approved changes in the configuration of Configuration Item (CI) after formal establishment of the baseline.

Constellation—considered to be a number of satellites with coordinated ground coverage, operating together under shared control, synchronized so that they overlap well in coverage and complement rather than interfere with other satellites' coverage

End—of-Life—When a satellite is no longer useful. This occurs when the satellite's payload or bus becomes so degraded it can no longer support operations, or when the payload's users no longer need it to accomplish their mission. It is possible for another agency to use a satellite's residual capability after the vehicle reaches end-of-life. However, this is not authorized if bus degradations would prevent possible satellite disposal.

Initial Operations Capability (IOC)—That first attainment of the capability to effectively employ a weapon, item of equipment, or system of approved specific characteristics with the appropriate number, type, and mix of trained and equipped personnel necessary to operate, maintain, and support the system. It is normally defined in the CDD. NOTE: IOC is event-driven and not tied to a specific future date.

Naval Network and Space Operations Command (NNSOC)—NNSOC, following operational acceptance, has overall responsibility for the Fleet Satellite Communications (FLTSATCOM) system satellites. The Fleet Satellite Communication (FLTSATCOM) system includes, FLTSAT, Ultra High Frequency (UHF) Follow-on (UFO), and Mobile User Objective System (MUOS). Commander, NNSOC exercises system management responsibilities and operational control of the FLTSATCOM system satellites and payloads, through the Naval Satellite Operations Center, located at Point Mugu CA.

Operational Control (OPCON)—The authority to perform those functions of command over subordinate forces involving composition of those forces, assignment of tasks, designation of objectives and tactical and authoritative direction necessary to accomplish the mission. OPCON authority is exercised through component commanders and the commanders of established subordinate organizations.

Operational Turnover—The point in time for operational system responsibility and control of spacecraft systems transfers from the acquisition organization (i.e. SPO) to an operational unit (i.e. wing/squadron).

Payload—The components performing the satellite's mission (for example, communications, navigation, weather, warning). A satellite can carry more than one payload, expanding its primary mission or giving it secondary missions.

Payload Control Authority (PCA)—The authority and ability to provide control and management of a satellite's payload.

Research and Development (R&D)—A one-of-a-kind or few-of-a-kind space experiment system used to demonstrate/validate new technology; not intended for use in an operational capacity.

Residual Capability Satellite—A residual satellite is not part of the operational constellation and has some capabilities that could be employed, if required.

SATCOM Operational Manager—Lead organization responsible for day-to-day operations of a system. Normally designated as having primary responsibility for managing the system to maximize the satisfaction of user requirements.

Satellite Control Authority (SCA)—A transferable authority and ability to provide Telemetry, Tracking and Commanding (TT&C) of a satellite's bus and to provide control and management of a satellite's payload unless PCA is assigned to another organization.

Satellite Operations Center (SOC)—Facility conducting prescribed on-orbit TT&C activities for operational satellites under COCOM authority. Activities include, but are not limited to mission data recovery, SV status and safety, maintaining bus and payload capabilities, maneuvering and station keeping throughout the useful life of the SV.

Satellite/SATCOM System Expert (SSE)—The component or designated organization responsible for providing the technical planning and functions in support of the operational management of a specific satellite/SATCOM constellation.

Space and Missile Systems Center (SMC) System Program Office (SPO)—The SPOs, located at Los Angeles AFB, design, develop and procure space and associated satellite control systems and are Launch and Deployment Authority (LDA) for R&D and RDT&E systems. The SPOs provide technical advice and support, including Technical Advisors and other contractors, to the SW throughout the lifetime of their assigned satellite programs.

System Safety—The element of operational risk management that uses specialized engineering techniques to systematically identify, assess, mitigate, and communicate hazards to personnel and high-value equipment/activities. Systems safety includes, but is not limited to the following skills sets (i.e., Developing Preliminary Hazard List, Preliminary Hazard Analysis, Energy Flow/Barrier Analysis, Failure Modes Effects Analysis, Failure Modes Effects and Criticality Analysis, Fault Tree Analysis, Fishbone Failure Analysis, Combinatorial, Failure Probability Analysis, Event Tree Analysis, Cause-Consequence Analysis, Risk Acceptance and Strategy Selection in Technology Activities, Failure Information, Propagation Modeling, Assessment of Operating Procedures, Human Factors and Operator Errors, Weighted Scoring Decision Making, Sneak Circuit Analysis, and/or Probabilistic Risk Assessment).

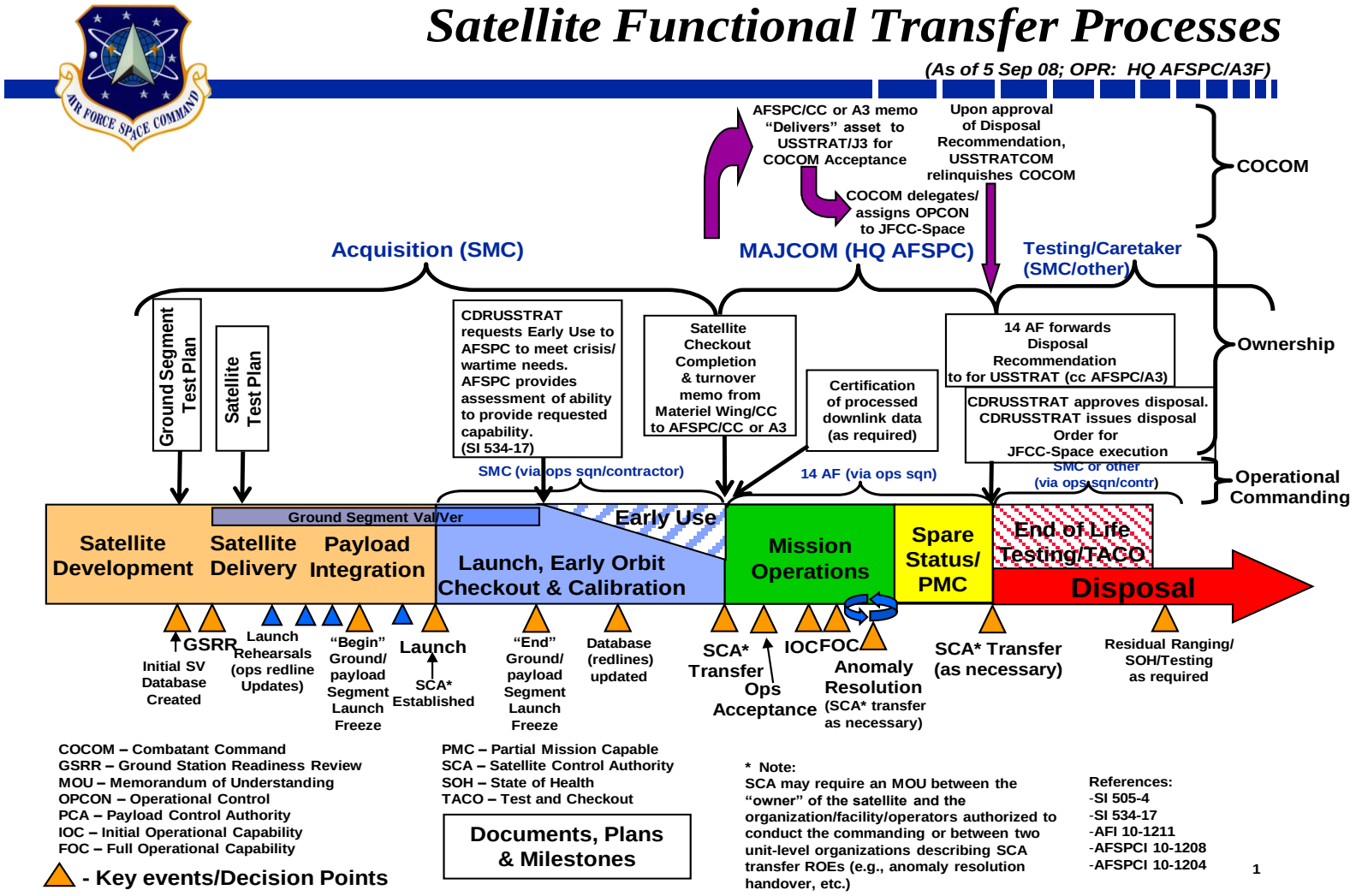
Tactical Control (TACON)—The authority and responsibility to take the necessary action with unit assets to provide mission data and sensor management. SCA is inherent in TACON but may be delegated.

Attachment 2

SATELLITE FUNCTIONAL TRANSFER PROCESSES

A2.1. Satellite Functional Transfer Processes.

Figure A2.1. Satellite Functional Transfer Processes.



Attachment 3

SATELLITE CONTROL AUTHORITY (SCA) SAMPLE LETTERS

A3.1. Satellite Control Authority (SCA) Sample Letters. Figure A3.1. and A3.2 are sample letters to be used by appropriate agencies to transfer Satellite Control Authority for all AFSPC satellite programs IAW this instruction.

Figure A3.1. SMC Letter to 14 AF (AFSTRAT) Recommending SCA Transfer.

DD MMM YYYY

MEMORANDUM FOR 14 AF (AFSTRAT)/A3

FROM: ISSW/CC

SUBJECT: Transition of DSP Flight XX Satellite Control Authority (SCA)

1. The ISSW/CC transferred SCA of DSP Flight XX to USSTRATCOM effective DD/HHMMZ MMM YY.

2. All Flight XX test activities were completed in 30 days with results assessed as nominal. No anomalies were identified and all technical issues encountered during testing have been evaluated as having no mission impact. These technical issues will be closed through the normal anomaly investigation process or delivery of the flight database to the Space-based Infrared Systems Mission Control Station at Buckley Air Force Base CO.

3. Colonel Sam Jones, the SBIRS Space Group Commander, can address any questions or issues you or your staff may have. He can be reached at DSN XXX-XXXX, or contact Lt Col Tony Smith, DSP Operations and Sustainment, at DSN XXX-XXXX.

JOHN Q. SPACE
Colonel, USAF
Commander

cc:
HQ AFSPC/A3/A3F
(add additional office symbols as needed)

Figure A3.2. 14 AF (AFSTRAT) Letter Notifying SW of SCA Transfer.

DD MMM YYYY

MEMORANDUM FOR 460 SW/CC

FROM: 14 AF (AFSTRAT)/A3

SUBJECT: Transition of DSP Flight XX Satellite Control Authority

1. 14 AF (AFSTRAT)/A3 accepted Satellite Control Authority of DSP Flight XX effective DD/HHMMZ MMM YY and immediately transferred that authority to 460 SW.

2. All Flight XX test activities were completed in 30 days with results assessed as nominal. No anomalies were identified and all technical issues encountered during testing have been evaluated as having no mission impact. These technical issues will be closed through the normal anomaly investigation process or delivery of the flight database to the Space-based Infrared Systems Mission Control Station at Buckley Air Force Base CO.

3. Col Sam Jones, the SBIRS Space Group Commander, can address any questions or issues you or your staff may have. He can be reached at DSN XXX-XXXX, or contact Lt Col Tony Smith, DSP Operations and Sustainment, at DSN XXX-XXXX.

XXX X XXXXXXX
Rank, USAF
Title

cc:
HQ AFSPC/A3/A3F
(add additional office symbols as needed)

Attachment 4

COMBATANT COMMAND (COCOM) ACCEPTANCE SAMPLE LETTERS

A4.1. Combatant Command (COCOM) Acceptance Sample Letters. Figure A4.1. and A4.2. are sample letters to be used by appropriate agencies to provide USSTRATCOM with a recommendation to accept COCOM responsibility for individual satellites.

Figure A4.1. SMC Letter to HQ AFSPC/A3 Recommending SV Release to the Operational Constellation (Note: if this is the first satellite of a new constellation, the memo will be for HQ AFSPC/CC vice HQ AFSPC/A3).

DD MMM YYYY

MEMORANDUM FOR HQ AFSPC/A3

FROM: ISSW/CC

SUBJECT: Recommendation for Release of DSP Flight XX to Operational Constellation

1. Based upon the favorable completion of developmental and operational testing, ISSW recommends DSP Flight XX be released for operational deployment.

2. All Flight XX test activities were completed in 30 days with results assessed as nominal. No anomalies were identified and all technical issues encountered during testing have been evaluated as having no mission impact. These technical issues will be closed through the normal anomaly investigation process or delivery of the flight database to the Space-based Infrared Systems Mission Control Station at Buckley Air Force Base CO.

3. Based on the test results, Flight XX should well serve the joint and national missile warning needs for many years to come. If you have any questions, please contact me directly at DSN XXX-XXXX, or contact my POC XXX XXXXX, at DSN XXX-XXXX.

JOHN Q. SPACE
Colonel, USAF
Commander

cc:
14 AF (AFSTRAT)/CC/A3
(add additional office symbols as needed)

Figure A4.2. HQ AFSPC/A3 Letter to USSTRATCOM/J3 Recommending COCOM (Note: if this is the first satellite of a new constellation, the memo will be from HQ AFSPC/CC vice HQ AFSPC/A3).

DD MMM YYYY

MEMORANDUM FOR USSTRATCOM/J3

FROM: HQ AFSPC/A3

SUBJECT: Release of DSP Flight XX to Operational Constellation

1. HQ AFSPC/A3 recommends USSTRATCOM accept Combatant Command (COCOM) of the satellite.

2. All Flight XX test activities were completed in 30 days with results assessed as nominal. No anomalies were identified and all technical issues encountered during testing have been evaluated as having no mission impact. These technical issues will be closed through the normal anomaly investigation process or delivery of the flight database to the Space-based Infrared Systems Mission Control Station at Buckley Air Force Base CO.

3. Based on the test results, Flight XX should well serve the joint and national missile warning needs for many years to come. If you have any questions, please contact me directly at DSN XXX-XXXX, or contact my Chief, Space-Based Warning, Defense and Surveillance Branch, Lt Col Wade Norman, at DSN XXX-XXXX.

STANLEY T. KRESGE
Brig Gen, USAF
Director of Air, Space
and Nuclear Operations

cc:
14 AF (AFSTRAT)/CC
(add additional office symbols as needed)

Attachment 5

DISPOSAL AUTHORITY, PROCESS, METHODS AND REGIONS

A5.1. Disposal Authority, Process, Methods and Regions. Table A5.1. identifies the disposal authority, the disposal process and method for current AFSPC satellite programs.

Table A5.1. Disposal Authority, Process and Methods.

PROGRAM	DISPOSAL RECOMMENDATION AUTHORITY	DISPOSAL PROCESS	DISPOSAL METHOD
DMSP	NPOESS IPO and 14 AF (AFSTRAT)	NPOESS IPO and 14 AF (AFSTRAT) make disposal recommendations to USSTRATCOM	Per paragraph 3.6.4.1.
DSCS	DISA and 14 AF (AFSTRAT)	DISA and 14 AF (AFSTRAT) in coordination with SMC/MCW make disposal recommendations to USSTRATCOM through SMDC/ARSTRAT	Per paragraph 3.6.4.1.
DSP	14 AF (AFSTRAT)	14 AF (AFSTRAT) makes disposal recommendations to USSTRATCOM for operational satellites with a cc to AFSPC. 14 AF (AFSTRAT) makes disposal recommendations directly to AFSPC for non-operational satellites.	Per paragraph 3.6.4.2.
GPS	14 AF (AFSTRAT)	14 AF (AFSTRAT) makes disposal recommendations to USSTRATCOM for operational satellites with a cc to AFSPC. 14 AF (AFSTRAT) makes disposal recommendations directly to AFSPC for non-operational satellites.	Per paragraph 3.6.4.2.
Milstar	14 AF (AFSTRAT)	14 AF (AFSTRAT) makes disposal recommendations to USSTRATCOM for operational satellites with a cc to AFSPC. 14 AF (AFSTRAT) makes disposal recommendations directly to AFSPC for non-operational satellites.	Per paragraph 3.6.4.2.
SBIRS	14 AF (AFSTRAT)	14 AF (AFSTRAT) makes disposal recommendations to USSTRATCOM for operational satellites with a cc to AFSPC. 14 AF (AFSTRAT) makes disposal recommendations directly to	Per paragraph 3.6.4.2.

PROGRAM	DISPOSAL RECOMMENDATION AUTHORITY	DISPOSAL PROCESS	DISPOSAL METHOD
		AFSPC for non-operational satellites.	
Space Based Space Surveillance (SBSS)	14 AF (AFSTRAT)	14 AF (AFSTRAT)/CC makes disposal recommendations to USSTRATCOM for operational satellites with a cc to AFSPC/CC. 14 AF (AFSTRAT)/CC makes disposal recommendations directly to AFSPC/CC for non-operational satellites.	Per paragraph 3.6.4.2.
WGS	SMDC/ARSTRAT and 14 AF (AFSTRAT)	SMDC/ARSTRAT and 14 AF (AFSTRAT) make disposal recommendations to USSTRATCOM	Per paragraph 3.6.4.1.
AEHF	14 AF (AFSTRAT)	14 AF (AFSTRAT) makes disposal recommendations through AFSPC to USSTRATCOM for operational satellites. 14 AF (AFSTRAT) makes disposal recommendations directly to AFSPC for non-operational satellites.	Per paragraph 3.6.4.2.